Amendments to Claims

Claims 1-16. (Cancelled).

17. (Currently Amended) A modular system, comprising:

instrument bay for holding a set of modules that plug into the instrument bay each module capable of communication via a set of network communication links ~~contained in the instrument bay~~ and each module having a clock and means for synchronizing the clock in response to messages on the network communication links and each module performing a function such that the functions are coordinated by a synchronized time in the clocks thereby enabling one or more of the modules to be located outside of the instrument bay with no change to an underlying functionality in the modules;

at least one communication device contained in the instrument bay that enables communication among the modules via the network communication links wherein the communication device is selected in response to a physical placement of the modules in the system.

18. (Previously Presented) The modular system of claim 17, wherein the communication device is a communication hub for the network communication links to the modules.

19. (Previously Presented) The modular system of claim 17, wherein the communication device is a communication repeater for the network communication links to the modules.

20. (Previously Presented) The modular system of claim 17, wherein the communication device is a communication switch for the network communication links to the modules.

21. (Previously Presented) The modular system of claim 17, wherein one or more of the modules includes means for applying a stimulus in response to the synchronized time.

22. (Previously Presented) The modular system of claim 17, wherein one or more of the modules include means for obtaining a measurement and for generating a time-stamp for the measurement using the synchronized time.

23. (Previously Presented) The modular system of claim 17, wherein one or more of the modules includes means for obtaining a measurement at a given time using the synchronized time.

24. (Cancelled) The system of claim 17, wherein one or more of the modules are connected to separate sub-nets of a communication network via a corresponding communication device.

25. (Previously Presented) The modular system of claim 17, wherein one or more of the modules includes means for obtaining a message via the network communication links that includes an identification of a measurement and a time at which the measurement is to be obtained.

26. (Previously Presented) The modular system of claim 17, wherein one or more of the modules includes means for obtaining a message via the network communication links that includes an identification of a stimulus and a time at which the stimulus is to be applied.

27. (Previously Presented) The modular system of claim 17, wherein one or more of the modules includes means for obtaining a message via the network communication links

that includes an identification of a measurement and a time interval during which a series of the measurements are to be obtained.

28. (Previously Presented) The modular system of claim 17, wherein one or more of the modules includes means for obtaining a message via the network communication links that includes an identification of a stimulus and a time interval during which the stimulus is to be applied.

29. (Previously Presented) The modular system of claim 17, wherein one or more of the modules includes means for transferring a message via the network communication links that includes a measurement and a time at which the measurement was obtained.

30. (Currently Amended) A method for coordinating a set of functions in a modular system, comprising:

coupling each of a set of modules of the modular system to a set of network communication links ~~in an instrument bay~~;

selecting at least one communication device for providing communication among the modules in response to a physical placement of the modules and placing the communication device in the instrument bay;

synchronizing a clock in each module using messages carried on the network communication links;

performing ~~a function of the modular system in each module such that~~ the functions ~~are coordinated by~~ in response to a synchronized time in the clocks thereby enabling one or more of the modules to be located outside of the instrument bay with no change to an underlying functionality in the modules.

31. (Currently Amended) The method of claim 30, wherein

performing the functions ~~a function~~ includes applying a stimulus in response to the synchronized time.

32. (Currently Amended) The method of claim 30, wherein performing the functions ~~a function~~ includes obtaining a measurement and generating a time-stamp for the measurement using the synchronized time.

33. (Currently Amended) The method of claim 30, wherein performing the functions ~~a function~~ includes obtaining a measurement at a given time using the synchronized time.

34. (Cancelled) The method of claim 30, wherein selecting a communication device includes coupling the modules to separate sub-nets of a communication network via a corresponding communication device.

35. (Previously Presented) The method of claim 30, further comprising transferring a message via the communication device that includes an identification of a measurement and a time at which the measurement is to be obtained.

36. (Previously Presented) The method of claim 30, further comprising transferring a message via the communication device that includes an identification of a stimulus and a time at which the stimulus is to be applied.

37. (Previously Presented) The method of claim 30, further comprising transferring a message via the communication device that includes an identification of a measurement and a time interval during which a series of the measurements are to be obtained.

38. (Previously Presented) The method of claim 30, further comprising transferring a message via the communication device that includes an identification of a stimulus and a time interval during which the stimulus is to be applied.

39. (Previously Presented) The method of claim 30, further comprising transferring a message via the communication device that includes a measurement and a time at which the measurement was obtained.

40. (Currently Amended) A modular system, comprising:

first instrument bay for holding a first set of modules each ~~module~~ capable of communication via a first set of network communication links ~~contained in the first instrument bay~~, the first set of modules each ~~and each module~~ having a clock and means for synchronizing the clock in response to messages on the first set of network communication links, the first set of modules each ~~and each module~~ performing a function such that the functions of the first set of modules are coordinated by a synchronized time in the clocks in the first set of modules, the first instrument bay holding a first communication device that enables communication among the first set of modules via the first set of network communication links and that enables communication via a communication network;

second instrument bay for holding a second set of modules each ~~module~~ capable of communication via a second set of network communication links ~~contained in the second instrument bay~~, the second set of modules each ~~and each module~~ having a clock and means for synchronizing the clock in response to messages on the second set of network communication links, the second set of modules each ~~and each module~~ performing a function such that the

functions of the second set of modules are coordinated by a synchronized time in the clocks in the second set of modules, the second instrument bay holding a second communication device that enables communication among the second set of modules via the second set of network communication links and that enables communication via the communication network such that the synchronized time in the clocks in the first and second sets of modules enables placement of one or more modules of the first and second sets of modules outside of the first and second instrument bays with no change to an underlying functionality in the modules.

41. (Currently Amended) The modular system of claim 41, wherein the first and second sets of modules ~~in the first and second instrument bays~~ exchange messages for synchronizing the clocks via the communication network.

42. (Currently Amended) The modular system of claim 41, wherein the first and second sets of modules ~~in the first and second instrument bays~~ exchange messages pertaining to the functions via the communication network.

43. (Currently Amended) The modular system of claim 41, wherein the first and second communication devices ~~in the first and second instrument bays~~ are coupled to a sub-net of the communication network.